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EXAMINER

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2614

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/758,904	Applicant(s) PARK, GUN-HEE	
	Examiner Melur Ramakrishnaiah	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6-7, are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts (US PAT: 6,490,351) in view of Shirakawa (US PAT: 6,534,953) and Gerhard (WO 94/10782).

Regarding claim 1, Roberts discloses a mobile phone charger for charging a battery of mobile with a prescribed voltage (fig. 7), comprising: current generator (reads on source connected to 64, fig. 7) for generating current to charge the battery, and selectively generating current upon receiving a initiation signal, and a sterilizer being driven by the current received from current generator, and sterilizing the battery and the mobile phone (col. 2 lines 25-31; col. 3 lines 11-13; col. 4, lines 60-65; col. 8 lines 33-65).

Roberts differs from claimed invention in that although he teaches that sterilization of mobile phone happens during charging phase of the mobile phone or wireless telephone implying charging current being used for sterilization, he does not specifically teach charging current generator and using charging current in the process and further he does not specifically teach sterilizing the battery and mobile phone at predetermined time intervals.

However, Shirakawa discloses battery charging apparatus which teaches: using charging current generator generating charging current to charge battery in the process (figs. 1-3 col. 6 lines 48-53) and Gerhard discloses process for charging accumulators in cordless equipment which teaches charging the battery of cordless telephone at predetermined time intervals (see abstract).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Roberts system to provide for the following: charging current generator and using charging current in the process for charging the battery in order to use charging current for charging the battery of the mobile phone as taught by Shirakawa, thereby using the charging current for battery charging as well as sterilization of mobile phone and battery which provide an economical means of achieving multiple objectives simultaneously as is obvious for person skilled in the art and charging of battery at predetermined time intervals as this arrangement would provide means for protecting the battery by monitoring the charging state of the battery as taught by Gerhard, thereby using this arrangement for charging the battery and sterilizing the mobile phone and battery at predetermined intervals as is obvious to one skilled in the art in order to achieve twin objectives of charging the battery and steri.

Regarding claims 2-3, 6-7, Roberts teaches following: sterilizer (22, fig. 1) executes sterilization function for sterilizing the mobile phone (70, fig. 7) and the battery while charging function for charging the battery with the charging current is executed and terminates the sterilization function when the charging function is terminated, charging current generator in (76, fig. 7) outputs different charging currents according

to a charging mode, and sterilizer repeatedly executes and terminates the sterilization function according to charging mode (col. 2 lines 40-46; col. 3 lines 11-13, lines 32-36; col. 4 lines 22-31, lines 60-65; col. 8 lines 33-65).

3. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts in view of Shirakawa and Gerhard as applied to claim 1 above, and further in view of Matsuo (US PAT: 6,526,293, filed 6-4-1998).

The combination differs from claim 4 in that it does not specifically teach: charging mode is set to any one of a pre-charge mode, a constant current mode and a constant voltage mode.

However, Matsuo teaches the following: charging mode is set to any one of a pre-charge mode, a constant current mode and a constant voltage mode (fig. 2, col. 3, line 55 – col. 4, line 64).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination to provide for the following: charging mode is set to any one of a pre-charge mode, a constant current mode and a constant voltage mode as this arrangement would provide for optimum procedure for charging the battery of mobile phone as taught by Matsuo.

Regarding claim 5, Roberts teaches sterilization of mobile phone during charging process (col. 4 lines 60-65) and Gerhard teaches charging of battery at predetermined times in order to protect the battery (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Robert's system using Gerhard teaches to arrive at limitation of claim 5 such as

sterilizer executes sterilization function for a predetermined time whenever the charging mode changes in order to multiple objectives of charging and sterilization.

4. Claims 8-11, 15-17, 20, 22-25, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts in view of Inoue et al. (US PAT: 5,744,933, hereinafter Inoue) and Gerhard

Regarding claim 8, Roberts discloses a method for sterilizing a mobile phone using a mobile phone charger, comprising the steps of: generating a current to charge a battery of mobile phone upon receiving an input current, sterilizing the mobile phone using the current (col. 2 lines 25-31; col. 3 lines 11-13; col. 4, lines 60-65; col. 8 lines 33-65).

Roberts differs from claimed invention in that although he teaches that sterilization of mobile phone happens during charging phase of the mobile phone or wireless telephone implying charging current being used for sterilization, he does not specifically teach charging current generator and using charging current in the process and further he does not specifically teach sterilizing the battery and mobile phone at predetermined time intervals and determining whether the mobile phone is mounted to a charging connector transferring charging current to the mobile phone.

However, Inoue discloses the following: charging current generator and using charging current in the process for charging the battery of mobile phone (col. 3 lines 18-36) and Gerhard teaches: charging the battery at predetermined time intervals (abstract); and Inoue further teaches: determining whether the mobile phone is

mounted to a charging connector transferring charging current to the mobile phone (this reads on sensing means: col. 3 lines 40-46).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the Roberts system by using the teachings of Inoue and Gerhard to arrive at: charging current generator and using charging current in the process and controlling charging for predetermined time intervals in order to protect battery against overcharging as taught by Gerhard and determining whether the mobile phone is mounted to a charging connector transferring charging current to the mobile phone as this arrangement would provide necessary paraphernalia to control charging process of the mobile phone as taught by Inoue, thereby using the charging current for battery charging as well as sterilization of mobile phone and battery which provide an economical means of achieving multiple objectives simultaneously using charging current as is obvious for person skilled in the art.

Regarding claim 15, Roberts discloses a mobile phone charger for charging the battery of the mobile phone with prescribed voltage, comprising: current generator for generating current to charge the battery of the mobile phone upon receiving an input current, providing the mobile phone with the charging current, a charging connector (figs. 6-7) connected to the mobile phone receiving the charging current, a sterilizer (22, fig. 7) for generating wavelength signal corresponding to the charging current after the mobile phone is mounted to the charging connector, and sterilizing the mobile phone mounted to the charging connector (col. 2 lines 40-46; col. 3 lines 11-13, lines 32-36; col. 4 lines 22-31, lines 60-65; col. 8 lines 33-65).

Roberts differs from claim 15 in that although he teaches that sterilization of mobile phone happens during charging phase of the mobile phone or wireless telephone implying charging current being used for sterilization, he does not specifically teach charging current generator and using charging current in the process and further he does not specifically teach sterilizing the battery and mobile phone at predetermined time intervals and receiving charging status information.

However, Inoue teaches the following: charging current generator and using charging current in the process for charging the battery of mobile phone (col. 3 lines 18-36) and receiving charging status information (col. 3 lines 32-35) Gerhard teaches: charging the battery at predetermined time intervals (abstract).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the Roberts system by using the teachings of Inoue and Gerhard to arrive at: charging current generator and using charging current in the process for charging the battery at predetermined intervals and obtaining charging status as taught by Inoue and Gerhard, thereby using the charging current for battery charging as well as for sterilization of mobile phone and battery which provide an economical means of achieving multiple objectives simultaneously as is obvious for person skilled in the art.

Regarding claim 22, Roberts discloses a method for sterilizing a mobile phone using a mobile phone charger with sterilization function for sterilizing the mobile phone and battery of the mobile phone, comprising the steps of: executing a sterilization function of the mobile phone during charging process of the mobile telephone (col. 2

lines 40-46; col. 3 lines 11-13, lines 32-36; col. 4 lines 22-31, lines 60-65; col. 8 lines 33-65).

Roberts differs from claim 22 in that in that although he teaches that sterilization of mobile phone happens during charging phase of the mobile phone or wireless telephone implying charging current being used for sterilization, he does not specifically teach charging current generator and using charging current in the process, determining if the mobile phone is mounted to the mobile phone charger, and if so, providing the mobile phone with charging current, determining whether the mobile phone receives charging status information indicative of a charging function active/inactive state of the battery, if the mobile phone receives the charging status information, determining whether the a voltage value containing in the charging status information remains at a high logic state or low logic state, if the voltage value remains at a logic high state executing a sterilization function of the mobile phone.

However, Inoue teaches the following: charging current generator and using charging current in the process (col. 3 lines 17-31), determining if the mobile phone is mounted to the mobile phone charger (reads on sensing means: col. 3 lines 40-47) , and if so, providing the mobile phone with charging current, determining whether the mobile phone receives charging status information indicative of a charging function active/inactive state of the battery (fig. 5-6, col. 15 lines 44-48; col. 16 lines 27-32), if the mobile phone receives the charging status information, determining whether the a voltage value containing in the charging status information remains at a high logic state or low logic state (this reads on predetermined thresholds to regulate charging: col. 15,

line 50 – col. 16, line 26), if the voltage value remains at a logic high state executing a charging function of the mobile phone.

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the Roberts system by using the teachings of Inoue to arrive at: charging current generator and using charging current in the process, determining if the mobile phone is mounted to the mobile phone charger, and if so, providing the mobile phone with charging current, determining whether the mobile phone receives charging status information indicative of a charging function active/inactive state of the battery, if the mobile phone receives the charging status information, determining whether the a voltage value containing in the charging status information remains at a high logic state or low logic state, if the voltage value remains at a logic high state executing a charging function of the mobile phone as this arrangement would provide necessary paraphernalia to control charging process as taught by Inoue, thereby using the charging current for battery charging as well as for sterilization of mobile phone and battery which provide an economical means of achieving multiple objectives simultaneously as is obvious for person skilled in the art.

Roberts differs from claims 9-11 in that although he teaches sterilization of mobile phone or wireless phone during battery charging process of them, thereby implying using charging current in the process (col. 4 lines 60-65), he does not specifically teach: checking a voltage value charged in the battery of the mobile phone mounted to the charging connector, comparing the checked voltage value with a predetermined voltage value, if checked voltage is lower than the predetermined voltage

value, transmitting the charging current to the mobile phone mounted to the charging connector, and charging the battery with the charging current, if the checked voltage value is higher than the predetermined voltage value, terminating the charging current applied to the mobile phone, outputting different charging currents to a charging mode, repeatedly executing and terminating sterilization function according to the charging mode.

However, Inoue teaches: checking a voltage value charged in the battery of the mobile phone mounted to the charging connector, comparing the checked voltage value with a predetermined voltage value, if checked voltage is lower than the predetermined voltage value, transmitting the charging current to the mobile phone mounted to the charging connector, and charging the battery with the charging current, if the checked voltage value is higher than the predetermined voltage value, terminating the charging current applied to the mobile phone, outputting different charging currents to a charging mode, repeatedly executing and terminating charging function according to the charging mode (figs. 5-6, 13, col. 15, line 15 – col. 16, line 32).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the Roberts system by using the teachings of Inoue to arrive at: checking a voltage value charged in the battery of the mobile phone mounted to the charging connector, comparing the checked voltage value with a predetermined voltage value, if checked voltage is lower than the predetermined voltage value, transmitting the charging current to the mobile phone mounted to the charging connector, and charging the battery with the charging current, if the checked voltage

value is higher than the predetermined voltage value, terminating the charging current applied to the mobile phone, outputting different charging currents to a charging mode, repeatedly executing and terminating charging function according to the charging mode as this arrangement would provide necessary paraphernalia to control charging process as taught by Inoue, thereby using the charging current for battery charging as well as for sterilization of mobile phone and battery which provide an economical means of achieving multiple objectives simultaneously using charging current as is obvious for person skilled in the art.

Roberts differs from claim 16-17, in that although he teaches sterilizing the mobile phone or wireless phone during charging process thereby implying using charging current in the process (col. 2 lines 25-30; col. 3 lines 22-24; col. 4 lines 60-65), he does not specifically teach: charging system executes sterilization function of the mobile phone if it is determined that the battery of the mobile phone is being charged with charging current on the basis of the charging status information, charging current generator provides the mobile phone with different charging currents according to charging mode, and the sterilizer repeatedly executes and terminates sterilization function according to charging mode.

However, Inoue teaches: charging system executes function of the mobile phone if it is determined that the battery of the mobile phone is being charged with charging current on the basis of the charging status information, charging current generator provides the mobile phone with different charging currents according to charging mode,

and the battery charger repeatedly executes and terminates charging function according to charging mode (fig. 13, col. 15, line 15 - col. 16, line 32).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the Roberts system by using the teachings of Inoue to arrive at: charging system executes function of the mobile phone if it is determined that the battery of the mobile phone is being charged with charging current on the basis of the charging status information, charging current generator provides the mobile phone with different charging currents according to charging mode, and the battery charger repeatedly executes and terminates charging function according to charging mode as this arrangement would provide necessary paraphernalia to control charging process as taught by Inoue, thereby using the charging current for battery charging as well as for sterilization of mobile phone and battery which provide an economical means of achieving multiple objectives simultaneously using charging current as is obvious for person skilled in the art.

Regarding claim 20, 25 Roberts teaches: sterilizer generates different wavelengths within the predetermined range upon receiving the charging current, and executes sterilization process (col. 2 lines 25-57).

Roberts differ from claims 23, 27 in that although he teaches sterilizing the mobile phone or wireless phone during charging process thereby implying using charging current in the process (col. 2 lines 25-30; col. 3 lines 22-24; col. 4 lines 60-65), he does not specifically teach: if the voltage value remains at a low logic state, terminating the sterilization function of the mobile phone, includes the step of generating

different charging currents according to charging mode, includes the step of repeatedly executing and terminating the sterilization function according to the charging mode.

However, Inoue teaches: if the voltage value remains at a low logic state (reads on predetermined thresholds), terminating the charging function of the mobile phone, includes the step of generating different charging currents according to charging mode, includes the step of repeatedly executing and terminating the charging function according to the charging mode (fig. 13, col. 15, line 15 - col. 16, line 61).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the Roberts system by using the teachings of Inoue to arrive at: if the voltage value remains at a low logic state (reads on predetermined thresholds), terminating the charging function of the mobile phone, includes the step of generating different charging currents according to charging mode, includes the step of repeatedly executing and terminating the charging function according to the charging mode as this arrangement would provide necessary paraphernalia to control charging process as taught by Inoue, thereby using the charging current with associated control features for battery charging as well as for sterilization of mobile phone and battery which provide an economical means of achieving multiple objectives simultaneously using charging current as is obvious for person skilled in the art.

5. Claims 12-13, 18-19, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts in view of Inoue and Gerhard as applied to claims 11, 17, 27 above, and further in view of Matsuo.

The combination differs from claims 12, 18, 28 in that although it teaches sterilizing the mobile phone or wireless phone during charging process thereby implying using charging current in the process (col. 2 lines 25-30; col. 3 lines 22-24; col. 4 lines 60-65 of Roberts), it does not specifically teach: charging mode is set to any one of pre-charge mode, a constant current mode, and a constant voltage mode.

However, Matsuo teaches the following: charging mode is set to any one of pre-charge mode, a constant current mode, and a constant voltage mode (fig. 2 col. 3, line 55 - col. 4, line 64).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the Roberts system to provide for the following: charging mode is set to any one of pre-charge mode, a constant current mode, and a constant voltage mode as this arrangement would provide for optimum procedure for charging the battery of mobile phone as taught by Matsuo.

Roberts differ from claim 13 in that although he teaches sterilizing the mobile phone or wireless phone during charging process thereby implying using charging current in the process (col. 2 lines 25-30; col. 3 lines 22-24; col. 4 lines 60-65 of Roberts), he does not specifically teach: executing sterilization function for a predetermined time whenever charging mode is changed.

However, Gerhard teaches: executing charging function for a predetermined time whenever charging mode is changed (see abstract).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the Roberts system by using teachings of Gerhard to

provide for the following: executing charging function for a predetermined time whenever charging mode is changed as this arrangement would provide means for protecting the battery by monitoring the charging state of the battery as taught by Gerhard, thereby using this arrangement for charging the battery and sterilizing the mobile phone and battery at predetermined intervals as is obvious to one skilled in the art in order to achieve twin objectives of battery charging and sterilization of the mobile phone using charging current.

Claims 19 and 29 are rejected on the same basis as claim 13.

6. Claims 14, 21, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts in view of Inoue and Gerhard as applied to claims 8, 15, 22 above, and further in view of Eckhardt (US PAT: 6,461,568).

The combination differs from claims 14, 21, and 26 in that although it teaches sterilizing the mobile phone using ultraviolet sterilization process (abstract of Roberts), he does not teach infrared sterilization process.

However, Eckhardt discloses method and apparatus for sterilizing small objects which teaches: infrared sterilization process (col. 3 lines 11-20).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination to provide for the following: infrared sterilization process as this arrangement would provide another well known process for sterilization of objects as taught by Eckhardt.

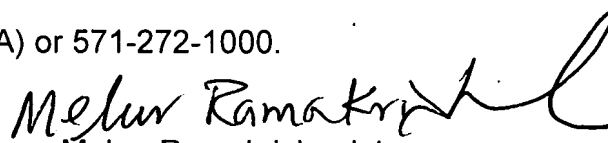
Response to Arguments

7. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melur Ramakrishnaiah whose telephone number is (571)272-8098. The examiner can normally be reached on 9 Hr schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curt Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Melur Ramakrishnaiah
Primary Examiner
Art Unit 2614